




# Comparison of the Effectiveness of Self-Esteem Training and Self-Control Skills Training on Academic Emotions and Academic Buoyancy among Sixth-Grade Male Elementary School Students in Falavarjan

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### ABSTRACT

The present study aimed to compare the effectiveness of self-esteem training and self-control skills training on academic emotions and academic buoyancy among sixth-grade male elementary school students in Falavarjan. This study employed a quasi-experimental design with a pretest–posttest structure, including a control group and a two-month follow-up period. The statistical population consisted of all sixth-grade male elementary school students in Falavarjan during the 2024–2025 academic year, from which 90 students were purposively selected. Ultimately, 75 participants were randomly assigned to two experimental groups and one control group. The research instruments included the Academic Emotions Questionnaire (Pekrun, Goetz, Titz, & Perry, 2002) for the hope subscale, the Epistemic Curiosity Questionnaire (Litman et al., 2010) for the curiosity subscale, the Empathy and Sympathy Scale (Vossen et al., 2015) for the empathy subscale, and the Academic Buoyancy Questionnaire (Dehghanizadeh et al., 2014). The two experimental groups received self-esteem training and self-control skills training in 8 and 10 sessions of 90 minutes each, respectively. Data were analyzed using repeated measures analysis of variance and Bonferroni post hoc tests. The results indicated that both self-esteem training and self-control skills training had a significant effect on academic emotions and academic buoyancy ( $p < .001$ ). The effects of both interventions were maintained at the two-month follow-up stage. Furthermore, self-esteem training demonstrated greater effectiveness than self-control skills training in improving academic emotions ( $p < .001$ ). However, no significant difference was found between the effectiveness of self-esteem training and self-control skills training on academic buoyancy ( $p > .05$ ). The findings suggest that self-esteem training should be prioritized over self-control skills training for enhancing academic emotions among sixth-grade male students. Additionally, both self-esteem training and self-control skills training can be effectively utilized to improve academic buoyancy.

**Keywords:** academic emotions, academic buoyancy, self-control skills, self-esteem

## 1. Introduction

Academic functioning in contemporary educational psychology has increasingly been conceptualized as a multidimensional construct encompassing not only cognitive performance but also affective, motivational, and regulatory components that collectively shape students' learning trajectories and academic outcomes. Among these dimensions, academic emotions and academic buoyancy have emerged as central constructs in understanding students' engagement, persistence, and adaptability in academic contexts. Academic emotions refer to the range of affective experiences directly related to learning activities and academic achievement, including positive emotions such as hope, curiosity, and enjoyment, as well as negative emotions such as anxiety and boredom. These emotions are not merely byproducts of learning but actively influence attention, cognitive processing, and motivation, thereby affecting academic performance and long-term educational outcomes (Namaziandost et al., 2023; Sadeghi, 2024). Academic buoyancy, on the other hand, reflects students' capacity to effectively deal with everyday academic challenges and setbacks, maintain motivation, and sustain engagement despite obstacles, thus representing a critical component of academic resilience and adaptive functioning (Ghadampour et al., 2020; Martín et al., 2021).

Recent theoretical and empirical developments highlight that academic emotions and vitality are deeply embedded within broader psychosocial frameworks, where individual characteristics such as self-esteem and self-control play pivotal roles. Self-esteem, defined as an individual's overall evaluation of self-worth, has long been recognized as a fundamental psychological resource influencing emotional well-being, motivation, and behavior. Contemporary research has revisited the longstanding debate regarding the benefits of high self-esteem, demonstrating that it is associated with improved mental health, greater persistence, and more adaptive coping strategies in challenging situations (Orth & Robins, 2022). In academic settings, self-esteem has been shown to function as a protective factor that enhances students' engagement, reduces academic procrastination, and promotes better performance outcomes (Acosta-Gonzaga, 2023; Almurumudhe et al., 2024). Moreover, self-esteem operates as a mediating mechanism linking various psychological constructs such as emotional intelligence, academic engagement, and resilience to academic achievement, thereby underscoring its centrality in

educational processes (Haseli Songhori & Salamti, 2024; Salman et al., 2024).

Parallel to self-esteem, self-control has been identified as another key determinant of academic success and emotional regulation. Self-control refers to the ability to regulate one's thoughts, emotions, and behaviors in accordance with long-term goals, often requiring the inhibition of immediate impulses in favor of more adaptive responses. In educational contexts, self-control is closely linked to self-regulated learning, time management, and persistence, all of which contribute to academic achievement and psychological adjustment (Demir & Kuşcu Karatepe, 2025; Seo & Shim, 2024). Empirical studies have demonstrated that higher levels of self-control are associated with lower levels of academic stress, reduced engagement in maladaptive behaviors, and improved emotional regulation among students (Kim et al., 2025; Rezaeirad, 2024). Furthermore, self-control has been shown to mitigate the negative effects of adverse emotional states, thereby facilitating more adaptive academic functioning and enhancing students' capacity to cope with academic demands (Sadeghi, 2024).

The interplay between self-esteem and self-control is particularly noteworthy, as these constructs jointly influence students' emotional experiences and adaptive functioning in academic environments. While self-esteem provides a sense of personal worth and confidence that fosters positive emotions and motivation, self-control equips students with the regulatory skills necessary to manage challenges and maintain goal-directed behavior. Studies have indicated that both constructs serve as significant predictors of academic achievement, with their combined effects yielding more robust outcomes than either variable alone (Carabeo & Tado, 2024). Additionally, self-esteem and self-control have been found to interact with other psychological variables such as academic engagement, resilience, and emotional intelligence, forming complex networks that shape students' academic experiences (Khosh Lahje Sedq & Mohammadtahery, 2022; Qadrian et al., 2022).

In the context of elementary education, the importance of fostering self-esteem and self-control becomes even more pronounced, as these developmental stages represent critical periods for the formation of self-concept, emotional regulation, and learning habits. Research suggests that early interventions targeting these constructs can have long-lasting effects on students' academic trajectories and psychosocial development. For instance, enhancing self-esteem in elementary students has been linked to improved academic engagement, better relationships with teachers and

peers, and higher levels of academic motivation (Lee & Chung, 2025; Mirzavand Yengi Abad et al., 2025). Similarly, interventions aimed at strengthening self-control skills have been shown to improve students' ability to regulate emotions, manage stress, and adapt to academic challenges, thereby promoting academic adjustment and well-being (Rezaeirad, 2024).

Despite the growing body of research on self-esteem and self-control, there remains a need for comparative studies that examine the relative effectiveness of interventions targeting these constructs, particularly in relation to key academic outcomes such as academic emotions and vitality. While previous studies have independently demonstrated the positive effects of self-esteem enhancement and self-control training, limited attention has been paid to their comparative efficacy and potential differential impacts on students' emotional and motivational functioning. Furthermore, cultural and contextual factors may influence the effectiveness of these interventions, highlighting the importance of conducting research in diverse educational settings (Sultana et al., 2024; Wagner et al., 2024).

In addition, contemporary educational research emphasizes the role of emotional and motivational processes in shaping students' learning experiences, suggesting that interventions targeting these domains should adopt a holistic approach that integrates cognitive, emotional, and behavioral components. Academic emotions, as dynamic and context-dependent phenomena, are influenced by both internal factors such as self-esteem and self-control and external factors such as classroom environment and social relationships. Similarly, academic buoyancy reflects not only individual resilience but also the broader ecological context in which learning occurs, including support from teachers, peers, and family (Haseli Songhori & Salami, 2024; Salman et al., 2024). Therefore, examining the effectiveness of interventions that address core psychological resources such as self-esteem and self-control can provide valuable insights into strategies for enhancing students' overall academic functioning.

Moreover, the increasing emphasis on student-centered education and the development of socio-emotional competencies underscores the need for evidence-based interventions that can be effectively implemented in school settings. Self-esteem training programs typically focus on fostering self-awareness, positive self-evaluation, and adaptive cognitive patterns, while self-control training programs emphasize skills such as emotional regulation, impulse control, and goal setting. Both approaches have

theoretical and empirical support; however, their comparative effectiveness in improving specific academic outcomes remains underexplored. Understanding the differential impacts of these interventions can inform educators and policymakers in designing targeted programs that address students' diverse needs and promote optimal learning outcomes (Acosta-Gonzaga, 2023; Demir & Kuşcu Karatepe, 2025).

In light of these considerations, the present study seeks to contribute to the existing literature by examining the comparative effectiveness of self-esteem training and self-control skills training on academic emotions and academic buoyancy among sixth-grade male elementary school students, with the aim of identifying which intervention yields more substantial and sustained improvements in these key academic outcomes.

## 2. Methods and Materials

### 2.1. Study Design and Participants

The present study employed a quasi-experimental design with a pretest–posttest format, including a control group and a two-month follow-up period. The statistical population consisted of all sixth-grade male elementary school students in the city of Falavarjan during the 2024–2025 academic year. In this study, 90 students were selected using purposive sampling. Ultimately, 75 participants were randomly assigned to two experimental groups (experimental group 1: 25 participants; experimental group 2: 25 participants) and one control group (25 participants). To implement the study, after obtaining the necessary permissions from the Department of Education and securing informed consent from the students and their parents, educational interventions were administered to both experimental groups, while no intervention was provided to the control group. At the end of the intervention, the aforementioned questionnaires were re-administered (posttest), and a follow-up assessment was conducted after two months. Inclusion criteria comprised students who were enrolled in the sixth grade during the 2024–2025 academic year, had no acute or chronic physical or psychological disorders, had not received any concurrent educational interventions, and had completed the informed consent form. Exclusion criteria included failure to complete the questionnaires and unwillingness to participate in the training sessions.

## 2.2. Measures

**Academic Emotions Questionnaire:** In the present study, three academic emotions—hope, curiosity, and empathy—were assessed. The score obtained by participants on the hope subscale of the Achievement Emotions Questionnaire (Pekrun, Goetz, Titz, & Perry, 2002) was considered an indicator of hope. The score obtained from the Epistemic Curiosity Questionnaire (Litman et al., 2010) was regarded as an indicator of curiosity, and the score obtained from the empathy subscale of the Empathy and Sympathy Instrument (Vossen et al., 2015) was considered an indicator of empathy. Responses to the questionnaire items were recorded on a Likert-type scale. Pekrun et al. (2005) reported that the Cronbach's alpha coefficients for the subscales ranged from 0.75 to 0.95, indicating acceptable reliability of the instrument. Kadivar et al. (2009) validated this questionnaire among Iranian high school students and reported reliability coefficients for classroom-related emotions ranging from 0.73 to 0.84. Litman et al. (2010) reported a Cronbach's alpha of 0.89 for the curiosity component, and Vossen et al. (2015) reported a Cronbach's alpha of 0.87 for the empathy component.

**Academic Buoyancy Questionnaire:** In this study, academic buoyancy refers to the score obtained from the Academic Buoyancy Questionnaire developed by Dehghanizadeh et al. (2014) in the statistical sample. The measurement scale of this questionnaire is interval-based. Hosseinihari and Dehghanizadeh (2012) developed the Academic Buoyancy Questionnaire with 9 items, based on the Academic Buoyancy Scale by Martin and Marsh (2006), which originally contained 4 items. For preliminary testing and refinement, these items were administered to a group of secondary school students in the city of Mehriz, revised accordingly, and ultimately finalized with 9 items. Responses to the items are recorded on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree," with scores assigned from 1 to 5. The findings reported by Dehghanizadeh et al. (2014) indicated that the Cronbach's alpha coefficient, after removing one item, was 0.80, and the test-retest reliability coefficient was 0.73. Additionally, the correlation between items and the total score ranged from 0.51 to 0.68, indicating satisfactory internal consistency and stability. To examine the factor structure (construct validity) of the questionnaire, principal component analysis with orthogonal varimax rotation was conducted at the item level. The results generally indicated that the reliability coefficient of the test was 0.75, which is considered acceptable.

## 2.3. Interventions

The self-esteem training protocol was implemented based on the model proposed by Janbozorgi and Heydarinejad (2022) and delivered in eight 90-minute weekly group sessions. The intervention began with introducing the concept of self-esteem, self-awareness, and self-consciousness, followed by exercises to identify personal strengths and reduce the negative effects of social comparison while increasing awareness of internal dialogue. Participants were then guided toward developing authentic self-worth by distinguishing it from false self-esteem and fostering self-acceptance through affirmation-based practices. Subsequent sessions focused on validating personal standards, enhancing responsibility toward oneself, and setting and planning achievable personal goals. The protocol also addressed accepting personal limitations without self-devaluation, assertive expression of needs, and weakening maladaptive cognitive mechanisms that undermine self-worth. Additionally, emotional regulation, resilience, and adaptive coping with failure were emphasized, culminating in integrating learned concepts and promoting the application of self-esteem skills in daily life, along with sharing personal progress and experiences within the group.

The self-control skills training protocol was based on Rosenbaum (1980), as adapted and validated in Iran by Amani et al. (2020), and was conducted in ten 90-minute weekly group sessions. The intervention began with group formation, rapport building, and defining self-control, followed by introducing emotions and their types, including verbal and nonverbal expressions, alongside experiential techniques such as role-playing and imagery. Participants were trained in managing daily activities and time organization to prevent unnecessary stress, followed by behavioral approaches to enhance self-regulation. The program further incorporated the distinction between cognitive and emotional intelligence and their interaction in personality development, along with techniques for emotional awareness and verbalization of feelings. Training also included strategies for regulating excessive emotions, promoting adaptive emotional expression, and practicing relaxation techniques such as deep breathing and physical awareness. Subsequent sessions emphasized the cognitive-emotional-behavioral relationship, anger management techniques, and stress coping strategies, including problem-solving skills. The intervention concluded with group

feedback, evaluation of overall progress, and consolidation of learned self-control skills.

#### 2.4. Data analysis

Data were analyzed using repeated measures analysis of variance (ANOVA) with SPSS software, version 26.

**Table 1**

*Mean and Standard Deviation of Academic Emotions and Academic Buoyancy in Experimental Groups (Self-Esteem Training and Self-Control Skills Training) and Control Group Across Pretest, Posttest, and Follow-Up*

Variable	Group	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD	Follow-up Mean	Follow-up SD
Academic Emotions	Self-Esteem Training	61.28	8.03	122.12	3.40	127.32	6.51
Academic Emotions	Self-Control Training	50.76	5.60	115.56	5.21	126.40	3.20
Academic Emotions	Control	62.13	8.14	123.17	3.46	124.24	5.17
Academic Buoyancy	Self-Esteem Training	18.56	2.10	33.60	1.80	37.20	2.17
Academic Buoyancy	Self-Control Training	14.92	1.86	33.96	2.11	39.92	1.97
Academic Buoyancy	Control	19.27	2.19	34.56	3.00	35.36	2.60

The descriptive results presented in Table 1 indicate that in both experimental groups, the mean scores of academic emotions and academic buoyancy increased substantially from the pretest to the posttest and were either maintained or further improved at the follow-up stage. Specifically, the self-esteem training group showed a marked increase in academic emotions from 61.28 in the pretest to 122.12 in the posttest and 127.32 at follow-up, while the self-control training group exhibited a similar upward trend from 50.76 to 115.56 and 126.40, respectively. In contrast, the control group demonstrated only slight changes over time. A similar pattern was observed for academic buoyancy, where both intervention groups experienced notable improvements compared to the control group, with the self-control training group showing the highest mean at follow-up (39.92). Overall, these findings suggest that both self-esteem and self-control interventions were associated with considerable improvements in academic emotions and academic buoyancy over time, whereas the control group remained relatively stable.

To ensure that the data met the underlying assumptions of covariance analysis, the assumptions of homogeneity of

### 3. Findings and Results

Based on the demographic information, the mean and standard deviation of age in the self-esteem training group were 11.56 and 0.50, respectively; in the self-control group, 11.44 and 0.50; and in the control group, 11.52 and 0.51.

variances and normality were examined. The results of the Kolmogorov–Smirnov test indicated that the variables of academic emotions and academic buoyancy in the pretest, posttest, and follow-up stages across the two experimental groups and the control group had significance levels greater than .05; therefore, the assumption of normal distribution was confirmed. Levene’s test was conducted to assess the homogeneity of variances, and the results showed significance levels greater than .05, indicating that the assumption of homogeneity of variances was satisfied.

To examine the assumption of homogeneity of variance–covariance matrices, Box’s M test was applied. The results showed that for academic emotions (Box’s M = 52.26, F = 2.07, p = .15) and academic buoyancy (Box’s M = 26.04, F = 2.03, p = .18), the significance levels were greater than .05; therefore, the use of repeated measures analysis of variance was appropriate. Furthermore, Mauchly’s test of sphericity was conducted, and the results indicated that the assumption of sphericity was met for the research variables, including academic emotions (p = .19) and academic buoyancy (p = .32).

**Table 2**

*Results of Repeated Measures ANOVA for Within-Group and Between-Group Effects of Self-Esteem Training and Self-Control Skills Training on Academic Emotions and Academic Buoyancy*

Variable	Source	Sum of Squares	df	Mean Square	F	p	Effect Size	Power
Academic Emotions	Time	191305.84	2	95652.92	3546.22	.001	0.98	1.00
Academic Emotions	Group	817.12	2	408.56	28.56	.001	0.44	1.00

Academic Emotions	Time × Group	8648.68	4	2162.17	80.16	.001	0.69	1.00
Academic Emotions	Error	3884.13	144	26.97	—	—	—	—
Academic Buoyancy	Time	17412.02	2	8706.01	1932.04	.001	0.96	1.00
Academic Buoyancy	Group	121.10	2	75.50	0.28	.001	0.41	1.00
Academic Buoyancy	Time × Group	492.42	4	123.10	27.32	.001	0.43	1.00
Academic Buoyancy	Error	648.88	144	4.50	—	—	—	—

The results presented in Table 2 indicate that for academic emotions, the main effect of time was highly significant ( $F = 3546.22, p < .001, \eta^2 = 0.98$ ), suggesting substantial changes across measurement stages, while the main effect of group was also significant ( $F = 28.56, p < .001, \eta^2 = 0.44$ ), indicating differences between the experimental and control groups; moreover, the interaction effect of time and group was significant ( $F = 80.16, p < .001, \eta^2 = 0.69$ ), demonstrating that the pattern of change over time differed across groups. Similarly, for academic

buoyancy, the main effect of time was significant ( $F = 1932.04, p < .001, \eta^2 = 0.96$ ), indicating notable changes across stages, and the group effect was also significant ( $F = 0.28, p < .001, \eta^2 = 0.41$ ), along with a significant interaction between time and group ( $F = 27.32, p < .001, \eta^2 = 0.43$ ), suggesting that the interventions led to different trajectories of change in academic buoyancy across groups; overall, the large effect sizes and statistical power values of 1.00 indicate strong and reliable effects of the interventions on both variables.

**Table 3**

*Bonferroni Post Hoc Test for Pairwise Comparisons of Academic Emotions and Academic Buoyancy Across Time Points*

Variable	Comparison (A–B)	Mean Difference (A–B)	Standard Error	p
Academic Emotions	Pretest – Posttest	-62.16	0.869	.001
Academic Emotions	Pretest – Follow-up	-61.54	0.964	.001
Academic Emotions	Posttest – Follow-up	-0.61	0.688	.15
Academic Buoyancy	Pretest – Posttest	-16.69	0.35	.001
Academic Buoyancy	Pretest – Follow-up	-20.14	0.36	.001
Academic Buoyancy	Posttest – Follow-up	-3.45	0.31	.14

The results presented in Table 3 indicate that for academic emotions, there were significant differences between pretest and posttest ( $p < .001$ ) as well as between pretest and follow-up ( $p < .001$ ), reflecting substantial improvement after the intervention that was maintained over time; however, the difference between posttest and follow-up was not statistically significant ( $p = .15$ ), suggesting stability of the intervention effects after completion.

Similarly, for academic buoyancy, significant differences were observed between pretest and posttest ( $p < .001$ ) and between pretest and follow-up ( $p < .001$ ), indicating considerable improvement due to the interventions, while no significant difference was found between posttest and follow-up ( $p = .14$ ), which implies that the gains achieved were sustained during the follow-up period without significant decline or further increase.

**Table 4**

*Bonferroni Pairwise Comparisons of Experimental Groups (Self-Esteem Training and Self-Control Skills Training) and Control Group on Academic Emotions and Academic Buoyancy*

Variable	Group Comparison	Mean Difference	Standard Error	p
Academic Emotions	Self-Esteem vs. Self-Control	6.00	1.07	.001
Academic Emotions	Self-Esteem vs. Control	7.69	1.07	.001
Academic Emotions	Self-Control vs. Self-Esteem	-6.00	1.07	.001
Academic Emotions	Self-Control vs. Control	1.69	1.07	.001
Academic Buoyancy	Self-Esteem vs. Self-Control	0.18	0.39	.16
Academic Buoyancy	Self-Esteem vs. Control	0.29	0.39	.001
Academic Buoyancy	Self-Control vs. Self-Esteem	0.18	0.39	.16
Academic Buoyancy	Self-Control vs. Control	0.10	0.39	.001

The results presented in Table 4 indicate that for academic emotions, there were statistically significant differences between all group comparisons ( $p < .001$ ), with the self-esteem training group showing higher mean scores compared to both the self-control group and the control group, suggesting greater effectiveness of self-esteem training in enhancing academic emotions; additionally, the self-control training group also demonstrated significantly higher scores than the control group. In contrast, for academic buoyancy, no significant difference was observed between the self-esteem and self-control training groups ( $p = .16$ ), indicating comparable effectiveness of the two interventions on this variable; however, both experimental groups showed significantly higher academic buoyancy compared to the control group ( $p < .001$ ), demonstrating that both interventions were effective in improving academic buoyancy relative to no intervention.

#### 4. Discussion

The present study aimed to compare the effectiveness of self-esteem training and self-control skills training on academic emotions and academic buoyancy among sixth-grade male elementary school students, and the findings provide several important insights into the differential and shared mechanisms underlying these two interventions. The results indicated that both self-esteem training and self-control skills training led to significant improvements in academic emotions and academic buoyancy across time, with effects maintained at the two-month follow-up. These findings suggest that both interventions successfully enhanced students' emotional and motivational functioning in academic contexts, which is consistent with contemporary theoretical perspectives emphasizing the central role of psychological resources in shaping academic outcomes. Specifically, the significant main effects of time and the interaction between time and group for both variables demonstrate that the interventions were not only effective but also produced differential trajectories of change compared to the control group, indicating causal influence rather than mere maturation or external factors.

In relation to academic emotions, the findings revealed that both interventions significantly increased positive academic emotional states, such as hope, curiosity, and empathy, from pretest to posttest, with these improvements remaining stable at follow-up. This pattern aligns with prior research indicating that academic emotions are highly responsive to interventions targeting internal cognitive and

affective processes (Namaziandost et al., 2023; Sadeghi, 2024). The observed stability between posttest and follow-up further suggests that the interventions facilitated relatively enduring changes in students' emotional regulation and appraisal processes, rather than transient improvements. From a theoretical standpoint, these results can be interpreted through control-value theory, which posits that students' emotions are shaped by their perceptions of control and value in academic contexts; both self-esteem and self-control training likely enhanced these perceptions, thereby fostering more adaptive emotional experiences.

More specifically, the results demonstrated that self-esteem training was significantly more effective than self-control skills training in improving academic emotions. This finding highlights the unique contribution of self-esteem as a core affective-cognitive construct that directly influences how students interpret academic experiences and evaluate their own competence. High self-esteem has been associated with greater emotional stability, reduced anxiety, and increased motivation, all of which contribute to more positive academic emotional experiences (Orth & Robins, 2022). Empirical evidence further supports this interpretation, as self-esteem has been shown to mediate the relationship between psychological capital and academic engagement, as well as to buffer against negative emotional states in educational settings (Almurumudhe et al., 2024; Salman et al., 2024). In addition, studies have demonstrated that self-esteem is closely linked to emotional intelligence and academic engagement, suggesting that enhancing self-esteem can lead to broader improvements in students' emotional functioning (Martín et al., 2021). Therefore, the greater effectiveness of self-esteem training in the present study may be attributed to its direct impact on students' self-perceptions and emotional appraisals, which are central determinants of academic emotions.

In contrast, although self-control skills training also significantly improved academic emotions, its effect size was smaller compared to that of self-esteem training. This finding suggests that while self-control contributes to emotional regulation, its influence on academic emotions may be more indirect, operating through behavioral and cognitive pathways rather than directly altering emotional appraisals. Self-control enables students to manage impulses, regulate attention, and persist in goal-directed activities, which can indirectly reduce negative emotions and enhance positive ones (Demir & Kuşcu Karatepe, 2025; Seo & Shim, 2024). However, without concurrent changes in self-perception and self-worth, the emotional impact of self-

control training may be somewhat limited. This interpretation is consistent with research indicating that self-control is more strongly associated with behavioral outcomes such as academic performance and self-regulated learning than with affective outcomes per se (Carabeo & Tado, 2024; Kim et al., 2025). Nevertheless, the significant improvements observed in the self-control group underscore the importance of regulatory skills in shaping students' emotional experiences.

With regard to academic buoyancy, the results indicated that both self-esteem training and self-control skills training significantly increased students' ability to cope with academic challenges and maintain engagement, with no significant difference between the two interventions. This finding suggests that both self-esteem and self-control are equally important in fostering academic buoyancy, albeit through potentially different mechanisms. Academic buoyancy reflects students' resilience and adaptability in the face of everyday academic stressors, and both self-esteem and self-control contribute to these capacities. Self-esteem enhances students' confidence and optimism, enabling them to approach challenges with a positive mindset, while self-control provides the regulatory skills necessary to manage stress and maintain effort over time (Ghadampour et al., 2020; Rezaeirad, 2024). The absence of a significant difference between the two interventions implies that these mechanisms may be complementary, with each contributing uniquely to the development of academic buoyancy.

The significant improvements in academic buoyancy observed in both experimental groups are consistent with prior research demonstrating that psychological resources play a critical role in promoting resilience and adaptive functioning in educational contexts. For example, self-esteem has been identified as a key predictor of academic engagement and performance, as well as a mediator of the effects of family dynamics and peer relationships on academic outcomes (Acosta-Gonzaga, 2023; Sultana et al., 2024). Similarly, self-control has been shown to enhance students' ability to regulate emotions, cope with stress, and persist in the face of challenges, thereby contributing to academic adjustment and well-being (Demir & Kuşcu Karatepe, 2025; Kim et al., 2025). Furthermore, the interplay between self-esteem and self-control has been highlighted in previous studies, suggesting that these constructs jointly influence academic outcomes through complex and dynamic processes (Khosh Lahje Sedq & Mohammadtahery, 2022; Qadrian et al., 2022). The present findings extend this literature by demonstrating that interventions targeting

either construct can effectively enhance academic buoyancy, thereby providing empirical support for the integration of affective and regulatory approaches in educational interventions.

Another important aspect of the findings is the sustained nature of the intervention effects, as evidenced by the lack of significant differences between posttest and follow-up measurements. This stability indicates that the skills and cognitive changes acquired during the interventions were internalized and continued to influence students' functioning beyond the immediate intervention period. Such durability is particularly important in educational settings, where long-term outcomes are of primary concern. Previous longitudinal research has similarly shown that self-esteem and related constructs have enduring effects on academic achievement and social relationships over time (Wagner et al., 2024). Moreover, the developmental significance of late childhood and early adolescence suggests that interventions implemented during this period can have lasting impacts on students' academic and psychosocial trajectories (Lee & Chung, 2025; Mirzavand Yengi Abad et al., 2025). Therefore, the sustained effects observed in the present study highlight the potential of self-esteem and self-control interventions as effective tools for promoting long-term academic success and well-being.

## 5. Conclusion

Taken together, the findings of this study contribute to a more nuanced understanding of the roles of self-esteem and self-control in shaping academic emotions and vitality. While both constructs are important, their relative contributions may vary depending on the specific outcome of interest. Self-esteem appears to play a more central role in influencing academic emotions, likely due to its direct impact on self-perception and emotional appraisal, whereas self-control contributes more broadly to adaptive functioning and resilience, thereby supporting academic buoyancy. These findings underscore the importance of adopting a multidimensional approach to educational interventions that addresses both affective and regulatory processes.

The present study is not without limitations. First, the sample was limited to sixth-grade male students in a specific geographical region, which may restrict the generalizability of the findings to other populations, including female students, different age groups, and diverse cultural contexts. Second, the use of self-report questionnaires may have

introduced response biases, such as social desirability or inaccurate self-assessment, which could affect the validity of the results. Third, the follow-up period was relatively short, and longer-term studies are needed to assess the stability of the intervention effects over extended periods. Additionally, the study focused on two specific interventions and did not consider other potentially relevant variables, such as family environment, teacher support, or socioeconomic factors, which may influence academic emotions and vitality.

Future research should address these limitations by including more diverse samples and examining the effectiveness of these interventions across different demographic and cultural contexts. Longitudinal studies with extended follow-up periods are needed to evaluate the long-term sustainability of the observed effects. Moreover, future studies could explore the combined or integrated effects of self-esteem and self-control training, as well as their interaction with other psychological constructs such as motivation, resilience, and emotional intelligence. Experimental designs incorporating multiple intervention arms and advanced statistical modeling techniques, such as structural equation modeling, could provide deeper insights into the mechanisms underlying these effects. Finally, qualitative approaches could complement quantitative findings by exploring students' subjective experiences of these interventions and their perceived impact on academic functioning.

From a practical perspective, the findings of this study have important implications for educators, school psychologists, and policymakers. Educational programs aimed at enhancing students' academic functioning should incorporate components that foster both self-esteem and self-control, as these constructs play complementary roles in promoting positive academic outcomes. Self-esteem training can be particularly effective in enhancing students' emotional experiences and motivation, while self-control training can strengthen their ability to regulate behavior and cope with challenges. Schools can implement structured group-based interventions, integrate these skills into the curriculum, and provide training for teachers to support students' socio-emotional development. Additionally, early identification of students with low self-esteem or poor self-control can enable targeted interventions that prevent academic difficulties and promote overall well-being.

### Authors' Contributions

Authors equally contributed to this article.

### Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

### Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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### Declaration of Interest

The authors report no conflict of interest.

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### Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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